

**Sawflies of the Genus *Perineura* Hartig from Japan
(Hymenoptera: Tenthredinidae)**

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Abstract.— Two new species of *Perineura* from Japan are described and illustrated, *P. kamikochiana*, sp. nov., and *P. nigra*, sp. nov. A key and illustrations are provided for separation of the Japanese species of *Perineura*.

Perineura is a small genus in the subfamily Tenthredininae. It was represented by six species in Europe and Japan. In Japan, five species, *P. esakii* Takeuchi, *P. pictipennis* Takeuchi, *P. japonica* Malaise, *P. stigma* Takeuchi, and *P. okutanii* Takeuchi, were recorded. Recently, I had an opportunity to examine 27 specimens of *Perineura* collected in Japan. They represent seven species, including two new species, *P. nigra* and *P. kamikochiana*, which are described below. Although Benson (1952) stated that the male of the European species, *Perineura rubi* (Panzer), is far more commonly found than the female, most of the specimens I have from Japan are females, and the males are not known or have not been associated with females. Also, the Japanese species described by Takeuchi (1959) and Malaise (1931) are based on females. Consequently, this review is based on females. Host plants of the species in Japan are unknown.

***Perineura* Hartig**

Perineura Hartig, 1837: 303. Type species: *Tenthredo rubi* Panzer, by monotypy.
Synairema Hartig, 1837: 314. Type species: *Tenthredo delicatula* Klug (= *Perineura rubi* Panzer), by monotypy.

Diagnosis.— Clypeus with anterior margin deeply and subtriangularly emarginate; malar space broad, nearly 2X diameter of front ocellus; occipital carina well defined on entire occipital margin; antenna fairly long, 2X or more head width and filiform, 3rd and 4th segments nearly equal in length; anal cell of forewing with 2A+3A meeting 1A or with a short straight anal crossvein at about basal third; hindwing with two middle cells in female and a marginal vein in male; first abdominal tergum divided; tarsal claw with short inner tooth, much smaller than outer tooth.

KEY TO FEMALES OF THE JAPANESE SPECIES OF *PERINEURA*

1. Antenna black (Fig. 9); forewing without a dark band below stigma (Figs. 12, 14-16) or with a small pale fleck below stigma (Fig. 13); *japonica* group 3
- Antenna with three apical segments white (Fig. 8); forewing with a dark band below stigma (Figs. 10, 11); *esakii* group 2
2. Tegula black, scutellum and posttergite nearly white; lancet with 20 serrulae, with basal 3 serrulae as in Fig. 31 *esakii* Takeuchi
- Tegula white, scutellum and posttergite nearly black; lancet with 19 serrulae, with basal 3 serrulae as in Fig. 32 *pictipennis* Takeuchi
3. Abdomen nearly fulvous (Figs. 26-28) 4
- Abdomen black (Fig. 30), or 2nd to 7th abdominal tergites with yellow fleck (Fig. 29) 6
4. Forewing with a pale brown fleck below stigma (Fig. 13); color pattern of abdomen as in Fig. 27; sawsheath as in Fig. 22; lancet with 19 serrulae, with basal 3 serrulae as in Fig. 34 *stigma* Takeuchi

- Forewing without a pale brown fleck below stigma (Figs. 12, 14-16); other features various5
5. Stigma of forewing nearly uniformly pale reddish yellow (Fig. 12); mesonotum with some yellow flecks (Fig. 17); color pattern of abdomen as in Fig. 26; sawsheath as in Fig. 21; lancet with 19 serrulae, with basal 3 serrulae as in Fig. 33*japonica* Malaise
- Stigma of forewing dark brown with basal third white (Fig. 14); mesonotum black; color pattern of abdomen as in Fig. 28; sawsheath as in Fig. 23; lancet with 19 serrulae, with basal 3 serrulae as in Fig. 35*okutanii* Takeuchi
6. Abdomen black; mesonotum and mesepisternum black; sawsheath as in Fig. 25; lancet with 20 serrulae, basal 3 serrulae as in Fig. 37*nigra*, sp. nov.
- Abdomen black with yellow fleck on 2nd to 7th tergites (Fig. 29); mesonotum with a V-like fleck (Fig. 18) and mesepisternum with a yellow fleck; sawsheath as in Fig. 24; lancet with 19 serrulae, with basal 3 serrulae as in Fig. 36*kamikochiana*, sp. nov.

***Perineura kamikochiana* Togashi, sp. nov.**

Female.— Length, 8.0 mm. Body black with following parts pale yellow to yellow: upper half of inner and hind orbits (Fig. 6), anterior half of clypeus, labrum, basal half of mandible, maxillary and labial palpi, tegula, pronotum, V-like fleck on mesonotum (Fig. 18), mesoscutellum except for posterior third, posttergite, most of metascutellum, central portion of metanotum, fleck on mesepisternum, triangular-like fleck on 2nd to 7th tergites, 8th and 9th tergites except for black lateral sides (Fig. 29), cercus, and 7th and 8th abdominal sternites. Antenna black. Wings rather yellowish hyaline, stigma of forewing pale yellow but apical third dark brown (Fig. 15), costa of forewing dark brown, other veins black. Legs yellow, fore and mid tibiae pale to dark brown, apical portion of hind femur with small dark brown spot.

Head: Postocellar area rather flat; postocellar furrow nearly absent; lateral furrow deep (Fig. 6); interocellar furrow distinct but shallow; OOL:POL:OCL = 2.5:1.0:1.0; frontal area slightly concave and connected with median fovea; lateral fovea linear; ration between antenno-ocular distance and distance between antennal sockets about 1.0:0.85; supraclypeal area slightly convex; clypeus nearly flattened; postorbital groove distinct. Antenna slightly longer than costa of forewing (ratio about 1.0:0.9), relative length of segments about 1.4:1.0:4.1:3.5:3.2:2.5:2.2:2.0:2.1.

Thorax: Normal; wing venation as in Fig. 15; hind basitarsus shorter than following 4 segments combined (ration about 1.0:1.3).

Abdomen: Normal; sawsheath as in Fig. 24; lancet with 19 serrulae, basal 3 serrulae as in Fig. 36.

Punctuation: Head covered with fine setigerous punctures but supraclypeal area nearly impunctate, shining; basal half of clypeus sparsely and finely punctured; cheek covered with medium sized punctures. Pronotum, praescutum, and thorax ventrally covered with fine setigerous punctures; mesonotal lateral lobes, sunken areas, mesoscutellum except for posterior 1/4, and posttergite nearly impunctate, shining; posterior 1/4 of mesoscutellum distinctly and evenly punctured, but posterior margin rugosoreticulately sculptured. Abdominal tergites shagreened.

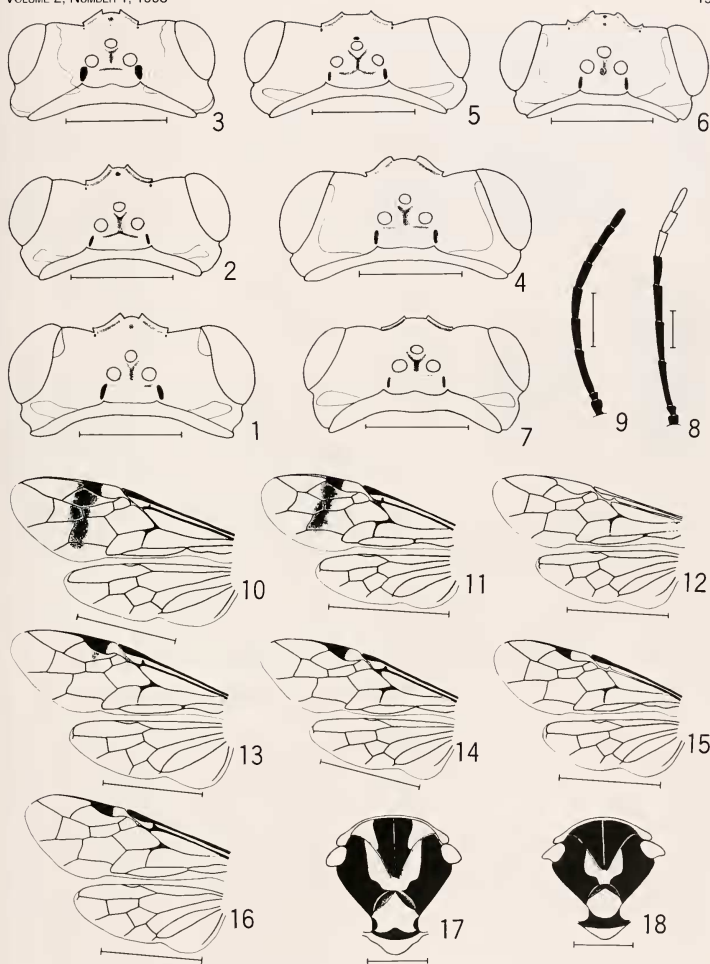
Distribution.— Japan (Honshu).

Holotype.— Female, 21-23.VI.1989, Kamikochi (altitude 1500 m), Nagano Prefecture, A. Shinohara leg. Deposited in the National Science Museum (Natural History), Tokyo.

Remarks.— This new species resembles species assigned to the *japonica* group, but is distinguished from them by the mostly black abdomen (species of the *japonica* group have the abdomen mostly fulvous, see Figs. 26-28).

***Perineura nigra* Togashi, sp. nov.**

Female.— Length, 8.5 mm. Body black with following parts pale yellow to yellow: anterior half of clypeus, labrum, maxillary and labial palpi, fleck on postorbit (Fig. 7), posterior margin of pronotum, tegula, cenchrus, posterior margin of 1st abdominal tergite (Fig. 30), 9th tergite, and cercus. Antenna black. Wings slightly smoky, hyaline, stigma of



Figs. 1-18. 1-7, Head, dorsal view. 1, *Perineura esakii*. 2, *P. pictipennis*. 3, *P. japonica*. 4, *P. stigma*. 5, *P. okutanii*. 6, *P. kamikochiana*. 7, *P. nigra*. 8-9, Antenna, lateral view. 8, *P. esakii*. 9, *P. okutanii*. 10-16, Wing venation. 10, *P. esakii*. 11, *P. pictipennis*. 12, *P. japonica*. 13, *P. stigma*. 14, *P. okutanii*. 15, *P. kamikochiana*. 16, *P. nigra*. 17-18, Thorax, dorsal view. 17, *P. japonica*. 18, *P. kamikochiana*. (Scale of 1-9 and 17-18, 1.0 mm; 10-16, 5.0 mm.)

forewing except for basal 1/4 and other veins dark brown to black, basal 1/4 of stigma pale yellow (Fig. 16). Legs fulvous, but all coxae black, apical portion of all tarsi become darker.

Head: Postocellar area nearly flattened; postocellar furrow ill-defined; lateral furrow distinct (Fig. 7); interocellar furrow slightly depressed; frontal area nearly flattened; median fovea shallow, circular in outline; lateral fovea deep; ratio between antenno-ocular distance and distance between antennal sockets about 1.5:1.0; supraclypeal area nearly flat; clypeus nearly flat; labrum nearly flat; postorbital groove distinct. Antenna shorter than costa of forewing (ratio about 1.0:1.1), relative length of segments about 1.6:1.0:3.6:3.0:2.9:2.4:1.8:1.8:2.0.

Thorax: Normal; mesoscutellum slightly convex; wing venation as in Fig. 16; hind basitarsus slightly shorter than following 3 segments combined (ration about 1.0:1.1).

Abdomen: Normal; sawsheath as in Fig. 25; lancet with 20 serrulae, basal 3 serrulae as in Fig. 37.

Punctuation: Head covered with fine setigerous punctures; supraclypeal area nearly impunctate, shining; pronotum, praescutum, and thorax ventrally covered with fine setigerous punctures; mesonotal lateral lobes, sunken areas, mesoscutellum except for posterior 1/4, metascutellum, and metanotum nearly impunctate, shining; posterior 1/4 of mesoscutellum distinctly and evenly punctured; abdominal tergites shagreened.

Distribution.— Japan (Honshu).

Holotype.— Female, 4.V.1974, Mt. Jinba, Tokyo Metropolitan, A. Shinohara leg. Deposited in the National Science Museum (Natural History), Tokyo.

Remarks.— This new species closely resembles *P. kamikochiana*, but it is distinguished from the latter by the black mesonotum and abdomen (in *P. kamikochiana* the mesonotum and abdomen have yellow flecks, see Figs. 18, 29), and by the 20 serrulae and the shape of the basal three serrulae of the lancet (in *P. kamikochiana* the lancet has 19 serrulae and the basal 3 serrulae have two subbasal teeth, see Fig. 36).

Perineura esakii Takeuchi

Perineura esakii Takeuchi, 1959: 70.

Specimen examined.— One female, 3.VII.1988, Mt. Hakusan, Ishikawa Prefecture, T. Mikage leg. This specimen agrees with the original description by Takeuchi (1959).

Supplementary note.— Sawsheath as in Fig. 19; lancet with 20 serrulae, basal 3 serrulae as in Fig. 31.

Distribution.— Japan (Honshu and Kyushu).

Perineura pictipennis Takeuchi

Perineura pictipennis Takeuchi, 1959: 71.

Specimens examined.— 1 female, 23.IV.1971, Kobotoke, Tokyo Metropolitan, A. Shinohara leg.; 1 female, 19.V.1983, Chugu Spa, foot of Mt. Hakusan, Ishikawa Prefecture, I. Togashi leg.; 1 female, 10.V.1988, Mt. Fujishigadake, Ishikawa Prefecture, I. Togashi leg. These specimens agree with the original description by Takeuchi (1959).

Supplementary note.— Sawsheath as in Fig. 20; lancet with 19 serrulae, basal 3 serrulae as in Fig. 32.

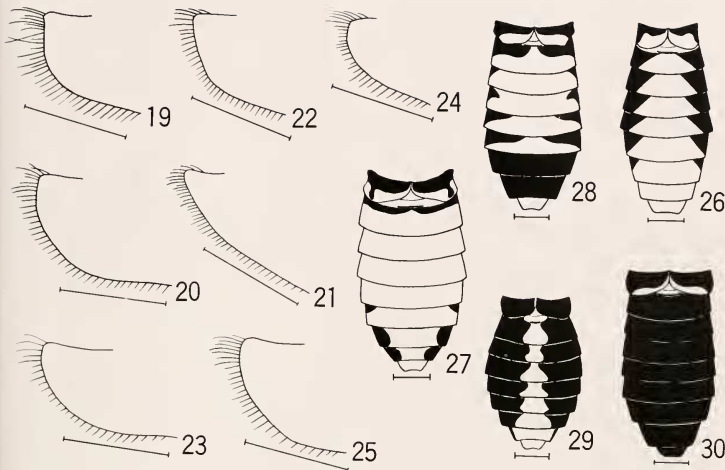
Distribution.— Japan (Honshu, Shikoku, and Kyushu).

Perineura japonica Malaise

Perineura japonica Malaise, 1931: 203.

Specimens examined.— 1 female, 4.VI.1977, Chuzenji, Nikko, Tochigi Prefecture, A. Shinohara leg.; 1 female, 5.VI.1977, Yumoto, Nikko, Tochigi Prefecture, A. Shinohara leg.; 1 female, 26.V.1974, Okutama, Tokyo Metropolitan, A. Shinohara leg.; 1 female, 5.VI.1984, Nojiriko, Nagano Prefecture, A. Shinohara leg.; 1 female, 21-23.VI.1989, Kamikochi, Nagano Prefecture, A. Shinohara leg.; 1 female, 26.V.1974, Ashu, Kyoto Prefecture, A. Mizuno leg. These specimens agree with the original description by Malaise (1931).

Supplementary note.— Mesonotum with some yellow flecks (Fig. 17); sawsheath as in Fig. 21;



Figs. 19-30. 19-25, Sawsheath, lateral view. 19, *Perineura esakii*. 20, *P. pictipennis*. 21, *P. japonica*. 22, *P. stigma*. 23, *P. okutanii*. 24, *P. kamikochiana*. 25, *P. nigra*. 26-30, Color pattern of abdomen. 26, *P. japonica*. 27, *P. stigma*. 28, *P. okutanii*. 29, *P. kamikochiana*. 30, *P. nigra*. (Scale of 19-25, 0.5 mm; 26-30, 1.0 mm.)

lancet with 19 serrulae, basal 3 serrulae as in Fig. 33.

Distribution.— Japan (Hokkaido and Honshu).

Perineura stigma Takeuchi

Perineura stigma Takeuchi, 1959: 72.

Specimens examined.— 1 female, 14.VI.1973, Mt. Hakusan, Ishikawa Prefecture, I. Togashi leg.; 1 female, 14-15.V.1986, Chojabaru, Mt. Kuju, Oita Prefecture, A. Shinohara leg.; 1 female, 1.V.1988, Senomoto, Kumamoto Prefecture, I. Otsuka leg.; 1 female, 3.V.1982, Shiva, Itsuki-mura, Kumamoto Prefecture, I. Otsuka leg.; 1 female, 5.V.1985, Mt. Yamaingiri, Kumamoto Prefecture, I. Otsuka leg. These specimens agree with the holotype.

Supplementary note.— Forewing with a pale brown fleck below stigma (Fig. 13); color pattern of abdomen as in Fig. 27; sawsheath as in Fig. 22;

lancet with 19 serrulae, basal 3 serrulae as in Fig. 34.

Distribution.— Japan (Honshu and Kyushu).

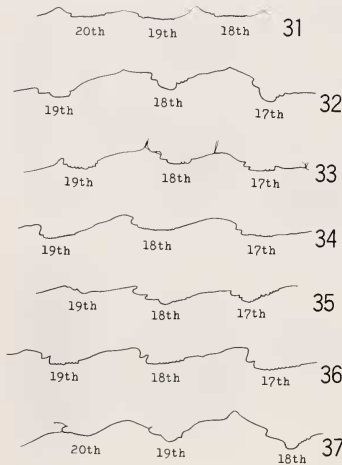
Perineura okutanii Takeuchi

Perineura okutanii Takeuchi, 1959: 73.

Specimens examined.— 1 female, 1.V.1977, Kawachi-mura, Ishikawa Prefecture, I. Togashi leg.; 1 female, 18.IV.1979, Mt. Ryozen, Shiga Prefecture, A. Shinohara leg.; 1 female, 20.V.1981, Jadani, Mt. Daisen, Tottori Prefecture, A. Shinohara leg.; 1 female, 14-15.V.1986, Chojabaru, Mt. Kuju, Oita Prefecture, A. Shinohara leg. These specimens agree with the original description by Takeuchi (1959).

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Figs. 31-37. Basal three serrulae of lancet. 31, *Perineura esakii*. 32, *P. pictipennis*. 33, *P. japonica*. 34, *P. stigma*. 35, *P. okutanii*. 36, *P. kamikochiana*. 37, *P. nigra*.

Supplementary note.— Color pattern of abdomen as in Fig. 28; sawsheath as in Fig. 23; lancet with 19 serrulae, basal 3 serrulae as in Fig. 35.

Distribution.— Japan (Honshu and Kyushu).

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